



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

005003

646.4001

Job Sheet 181951



Part No: 646.4001

Job Qty: 1 ea

Part Name: AS350 Cable Cutter System



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 8/14/18

Job Tracking No:

Due Date: 9/7/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG REV C1 IPP REV:A 12.10.23 NEW ISSUE DD VERF:JLM IPP REV:B 15.01.08 AS PER DWG REV.B
DD VERF:JLM IPP REV:C 16.01.07 AS PER DWG REV.C DD VERF:JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	9/7/18	9/7/18	0.00	0.00	Start Up Stores/Pkg-1		AUG 16 2018
110	Packaging	1 pcs	9/7/18	9/7/18	0.00	0.00	Packaging1-1		AUG 20 2018
120	QC	1 pcs	9/7/18	9/7/18	0.00	0.00	QC4		DAS
130	Packaging	1 pcs	9/7/18	9/7/18	0.00	0.00	Packaging3-1		DA69
135	DC	1 pcs	9/7/18	9/7/18	0.00	0.00	DC		69-89
140	QC21-FG	1 Ea	9/7/18	9/7/18	0.00	0.00	QC21		9-89

Part Op 130 - Identify and pack for shipping as per PPP 646.4001 Location: _____
Descriptions: 135 - Photocopy bluefile & type labels per PPP 646.4001

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
600.0129	VHB Tape	8 ft (8 ea)	90-Start up Operation	5031229
600.0990	Magnabond 6398 Part A Size 112 ml	1 Ea (1 ea)	90-Start up Operation	5078331
600.0991	Magnabond 6398 Part B Size 112 ml	1 Ea (1 ea)	90-Start up Operation	5078332
600.1012	Sealant PR1425B2 (#654 sem)	1 pcs (1 ea)	90-Start up Operation	5075327
600.1013	021200-3M Tape Primer 94 Primer 24216	5 Ea (5 ea)	90-Start up Operation	5066485
646.2910	Deflector	1 Ea (1 ea)	90-Start up Operation	5069573
646.3001	Lower Cable Cutter Assembly	1 Ea (1 ea)	90-Start up Operation	5079987
646.3110	Channel	1 Ea (1 ea)	90-Start up Operation	5054056
646.3210	Support	1 Ea (1 ea)	90-Start up Operation	5065343
646.3301	Upper Cutter Assembly	1 Ea (1 ea)	90-Start up Operation	5079963
646.3510	Strut	1 Ea (1 ea)	90-Start up Operation	5050453
646.3511	Strut	1 Ea (1 ea)	90-Start up Operation	5063686
646.3610	Filler	1 Ea (1 ea)	90-Start up Operation	5043544
646.3710	Doubler	1 Ea (1 ea)	90-Start up Operation	5049669
646.3711	Clip	1 Ea (1 ea)	90-Start up Operation	5038799
646.3712	Clip	1 Ea (1 ea)	90-Start up Operation	5026726
646.3713	Gusset	1 Ea (1 ea)	90-Start up Operation	5042029
646.3714	Gusset	1 Ea (1 ea)	90-Start up Operation	5038824
646.3715	Strut Doubler	2 Ea (2 ea)	90-Start up Operation	5035990
646.3716	Gauge Bracket	1 Ea (1 ea)	90-Start up Operation	5039275
646.3717	Doubler	1 Ea (1 ea)	90-Start up Operation	5026842
646.3718	Custom Washer	2 Ea (2 ea)	90-Start up Operation	5038803



Work Order update only

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS																																																																																																			
Part No. _____		Rework ☐		Skid-tube ☐		Cross tube ☐		Water Jet ☐		Engineering ☐																																																																																													
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646.3719	Doubler	2 Ea (2 ea)	90-Start up Operation	5061543
646.3810	Bracket	2 Ea (2 ea)	90-Start up Operation	5067214
646.3811	Radius Block	1 Ea (1 ea)	90-Start up Operation	5057883
646.3812	Gusset Bracket	2 Ea (2 ea)	90-Start up Operation	5067236
646.3813	AS350 Strut Bracket	1 Ea (1 ea)	90-Start up Operation	5037064
646.3910	Shim	4 Ea (4 ea)	90-Start up Operation	5065272
646.3911	Shim	1 Ea (1 ea)	90-Start up Operation	5041250
646.3912	Shim	4 Ea (4 ea)	90-Start up Operation	5076145
646.3913	Shim	1 Ea (1 ea)	90-Start up Operation	7126060
646.9410	Shim	1 Ea (1 ea)	90-Start up Operation	7140071
647.0112	Strut Bracket	2 Ea (2 ea)	90-Start up Operation	50603624
647.7703	Strut Assembly	2 Ea (2 ea)	90-Start up Operation	5081929
650.9201	Eyelet Bracket Assembly	2 Ea (2 ea)	90-Start up Operation	5092170
AN3-11A	Bolt	10 Ea (10 ea)	90-Start up Operation	5078105
AN3-12A	Bolt	2 Ea (2 ea)	90-Start up Operation	5048326
AN3-13A	Bolt	1 Ea (1 ea)	90-Start up Operation	5038733
AN3-3A	Bolt	4 Ea (4 ea)	90-Start up Operation	5056462
AN3-4A	Bolt	10 Ea (10 ea)	90-Start up Operation	5060063
AN3-5A	Bolt	2 Ea (2 ea)	90-Start up Operation	5071342
AN3-6A	Bolt	2 Ea (2 ea)	90-Start up Operation	5048402
AN316C4R	Nut, Jam	2 Ea (2 ea)	90-Start up Operation	5080637
AN44-5A	Eyebolt	2 Ea (2 ea)	90-Start up Operation	5065262
AN4C7A	Bolt	2 Ea (2 ea)	90-Start up Operation	5027516
AN665-34R	Clevis	2 Ea (2 ea)	90-Start up Operation	5065262
CCR264SS3-02	Cherry Rivet	36 Ea (36 ea)	90-Start up Operation	5071733
CR3213-5-3	Cherry Rivet	14 Ea (14 ea)	90-Start up Operation	5071733 5074204
MS20426AD5-7	Rivet	2 Ea (2 ea)	90-Start up Operation	5053848
MS20470AD5-5.5	Rivet	8 Ea (8 ea)	90-Start up Operation	71134063
MS20470AD5-6	Rivet	8 Ea (8 ea)	90-Start up Operation	7124089
MS20470AD5-7	Rivet	3 Ea (3 ea)	90-Start up Operation	7123425
MS21042L08	Nut	2 Ea (2 ea)	90-Start up Operation	5044234
MS21042L3	Nut	63 Ea (63 ea)	90-Start up Operation	5089340
MS21042L4	Nut	2 Ea (2 ea)	90-Start up Operation	5089365
MS21047-3	Nut Plate	18 Ea (18 ea)	90-Start up Operation	5020620
MS24693-C278	Screw	5 Ea (5 ea)	90-Start up Operation	5065341
MS24694-S51	Screw	5 Ea (5 ea)	90-Start up Operation	5004859
MS24694-S54	Screw	2 Ea (2 ea)	90-Start up Operation	5041925
MS24694-S55	Screw	3 Ea (3 ea)	90-Start up Operation	5050050
MS27039-08-13	Screw	2 Ea (2 ea)	90-Start up Operation	5016508
MS27039-1-10	Screw	2 Ea (2 ea)	90-Start up Operation	5071834
MS27039-1-12	Screw	6 Ea (6 ea)	90-Start up Operation	5049832x3 5006971x3
MS27039-1-16	Screw	24 Ea (24 ea)	90-Start up Operation	5049833
MS27039-1-19	Screw	22 Ea (22 ea)	90-Start up Operation	5071413
MS27039-1-20	Screw	2 Ea (2 ea)	90-Start up Operation	5000680
MS27039-1-21	Screw	4 Ea (4 ea)	90-Start up Operation	5037684
NAS1149F0332P	Washer	144 Ea (144 ea)	90-Start up Operation	5103666
NAS1149F0363P	Washer	2 Ea (2 ea)	90-Start up Operation	5075330
NAS1149F0432P	Washer	4 Ea (4 ea)	90-Start up Operation	5083558
NAS1149FN832P	Washer	4 Ea (4 ea)	90-Start up Operation	71138336-9

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	600.0129	8	304	0
	600.0990	1	15	0
	600.0991	1	15	0
	600.1012	1	19	0
	600.1013	5	49	0
	646.2910	1	30	0
	646.3001	1	4	0
	646.3110	1	6	0
	646.3210	1	19	0
	646.3301	1	4	0
	646.3510	1	22	0

005003

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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646.3511	1	27	0
646.3610	1	27	0
646.3710	1	53	0
646.3711	1	37	0
646.3712	1	25	0
646.3713	1	20	0
646.3714	1	26	0
646.3715	2	39	0
646.3716	1	43	0
646.3717	1	29	0
646.3718	2	50	0
646.3719	2	42	0
646.3810	2	14	0
646.3811	1	34	0
646.3812	2	8	0
646.3813	1	16	0
646.3910	4	45	0
646.3911	1	26	0
646.3912	4	42	0
646.3913	1	42	0
646.9410	1	104	0
647.0112	2	114	0
647.7703	2	7	0
650.9201	2	25	0
AN3-11A	10	275	0
AN3-12A	2	128	0
AN3-13A	1	123	0
AN3-3A	4	484	0
AN3-4A	10	191	0
AN3-5A	2	428	0
AN3-6A	2	48	0
AN316C4R	2	49	0
AN44-5A	2	19	0
AN4C7A	2	159	0
AN665-34R	2	29	0
CCR264SS3-02	36	237	0
CR3213-5-3	14	141	0
MS20426AD5-7	2	1,067	0
MS20470AD5-5.5	8	261	0
MS20470AD5-6	8	1,046	0
MS20470AD5-7	3	155	0
MS21042L08	2	3,152	0
MS21042L3	63	4,275	0
MS21042L4	2	5,856	0
MS21047-3	18	98	0
MS24693-C278	5	170	0
MS24694-S51	5	179	0
MS24694-S54	2	85	0
MS24694-S55	3	241	0
MS27039-08-13	2	203	0
MS27039-1-10	2	340	0
MS27039-1-12	6	149	0
MS27039-1-16	24	179	0
MS27039-1-19	22	349	0
MS27039-1-20	2	123	0
MS27039-1-21	4	34	0
NAS1149F0332P	144	894	0
NAS1149F0363P	2	628	0
NAS1149F0432P	4	2,161	0
NAS1149FN832P	4	2,566	0

Part Specifications

Specifications could not be found.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐		AGAINST DEPARTMENT/PROCESS			
Date :		Step #:		QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation				Disposition			
				Completed By			
				Lead hand / Supervisor Approval Verification			
				QC / QA Coordinator Approval			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		FAULT CATEGORY		OTHER :			

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES DBA DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE EXPLICIT WRITTEN PERMISSION OF APICAL INDUSTRIES DBA DART AEROSPACE IS PROHIBITED.

NOTES:

1. AFTER INSTALLATION, APPLY F/N 54 A/R TO FILL GAPS AND FILLET EDGES.

2. INSTALL F/N 14 WITH F/N 52 & 53.

3. 3M VHB ADHESIVE TAPE .025" THICK X .50" WIDE
VENDOR: MCMASTER-CARR P/N 75935A651.

4. 3M TAPE PRIMER 94, APPLY TO BOTH SURFACES A/R BEFORE TAPE.
VENDOR: R.S. HUGHES P/N 021200-24216.

5. REUSE FASTENERS FROM F/N 1.

6. USE WASHERS A/R AS SHIMS TO OBTAIN BEST FITMENT.

7. AT CUSTOMERS OPTION, INSTALL F/N 65 BY MATCH DRILLING ON TO F/N 1.

8. INSTALL SHIM IF OEM PROVISIONS ARE INSTALLED ON AIRCRAFT. REMOVE SHIM LAYERS TO ACHIEVE CORRECT SIZE. MATCH DRILL HOLES. USE F/N 78 SCREW IN PLACE OF F/N 17 SCREW.

9. NEWER INSTALLATIONS ON AIRCRAFT WITH UPDATED CANOPY MAY REQUIRE DIFFERENT LENGTH SCREWS. USE F/N 62 TO REPLACE F/N 44 & F/N 26 IN PLACE OF F/N 41 WHEN NECESSARY.

UNINCORPORATED ECN(S)

05304

5	5	5	78	601.3875	SCREW	MS22703P-1-10				
1	1	1	77	646.9410	SHIM	AN3-12A				
	4	4	76	601.2764	WASHER	MS22703P-1-10				
	2	2	75	601.2973	LOCKNUT	MS22703P-1-10				
	2	2	74	601.2988	SCREW	MS22703P-1-10				
	2	2	73	601.2943	LOCKNUT	MS22703P-1-10				
	2	2	72	601.3128	NUT	AN3-12A				
	2	2	71	601.3209	LOCKNUT	MS22703P-1-10				
	4	4	70	601.2638	WASHER	MS22703P-1-10				
	2	2	69	601.2669	BOLT	AN3-12A				
	2	2	68	601.3119	CLEVIS	AN3-12A				
	2	2	67	601.3121	EYE BOLT	AN3-12A				
	2	2	66	650.9201	EYE BRACKET ASSY	AN3-12A				
	REF	REF	REF	65	647.5701	GPS MOUNT KIT	AN3-12A			
			2	64	601.3151	WASHER	MS22703P-1-10			
		2		63	601.2911	SCREW	MS22703P-1-10			
		24	24	62	601.2637	SCREW	MS22703P-1-10			
2	2	2	2	61	601.2763	BOLT	AN3-12A			
	1	1	1	60	646.3913	SHIM				
	4	4	4	59	646.3912	SHIM				
	1	1	1	58	646.3911	SHIM				
	4	4	4	57	646.3910	SHIM				
	5	5	5	56	600.1013	PRIMER				
	8 FT	8 FT	55	600.0129	VHB TAPE					
	1	1	1	54	600.1012	SEALANT	PR-1405 CLASS B			
	1	1	1	53	600.0991	MAGNOBOND 6398 PART B	AN3-11A			
	1	1	1	52	600.0990	MAGNOBOND 6398 PART A				
6	10	10	10	51	601.2826	BOLT	AN3-11A			
		2	2	50	646.3814	WIPER BRACKET				
		2	2	49	601.2910	SCREW	MS22703P-1-10			
	2		2	48	601.1365	SCREW	MS22703P-1-10			
	2		2	47	646.3719	DOUBLER				
	2		2	46	646.3718	CUSTOM WASHER				
	1		1	45	646.3717	DOUBLER				
	22	2	22	44	601.1948	SCREW	MS22703P-1-10			
	2	2	2	43	601.1952	SCREW	MS22703P-1-10			
			4	42	601.1956	SCREW	MS22703P-1-10			
4006	4005	4004	4003	4002	4001	FIND #	PART #	DESCRIPTION	MATL	SPEC.

REV.	DESCRIPTION	DATE	APPROVED
A	INCORPORATED ECN 02199, 02201, 02216 & 02265	03/08/2010	P. BRAVO
B	INCORPORATED ECN 02046, 02099 & 04731	11/04/2014	P. BRAVO
C	INCORPORATED ECN 02098	09/09/2015	P. BRAVO

		2		2	41	601.2829	SCREW	MS24694554		
		2		2	40	601.2831	RIVET	MS20476ADS-7		
		1		1	39	646.3716	GAUGE BRACKET			
		6		6	38	601.1953	SCREW	MS27039-1-12		
	2	2		2	37	646.3715	STRUT DOUBLER			
		2		2	36	601.2824	BOLT	AN3-5A		
12	36			36	35	601.2277	RIVET	CCR26465-3-02		
6	18			18	34	600.0795	NUTPLATE	MS21047-3		
3	3			3	33	601.2565	RIVET	MS20476ADS-7		
1	1			1	32	646.3813	STRUT BRACKET			
4	4			4	31	601.2822	BOLT	AN3-3A		
2	2			2	30	646.3812	GUSSET BRACKET			
8	8			8	29	601.2564	RIVET	MS20476ADS-6		
1	1			1	28	646.3714	GUSSET			
	1	1		1	27	646.3610	FILLER			
	3	3		3	26	601.2830	SCREW	MS24694555		
	2	2		2	25	601.2825	BOLT	AN3-6A		
	1	1		1	24	646.3811	RADIUS BLOCK			
	1	1	1	1	23	646.3712	CLIP			
	1	1		1	22	646.3711	CLIP			
8	8			8	21	601.2832	RIVET	MS20476ADS-5.5		
14	14			14	20	601.2020	RIVET	CR2213-5-3		
4	6	4	6	10	19	601.2823	BOLT	AN3-4A		
	1	1	1	1	18	601.2827	BOLT	AN3-13A		
	5	5		5	17	601.2912	SCREW	MS24694551		
1	1			1	16	646.3713	GUSSET			
1	1			1	15	646.3210	SUPPORT			
		1		1	14	646.3710	DOUBLER			
	1	1		1	13	646.3110	CHANNEL			
14	10	8	53	6	61	12	601.1624	LOCKNUT	MS2104213	
16	32	18	120	16	144	11	601.1607	WASHER	MS2104213P	
				1	10	646.3410	LH WIPER DEFLECTOR			
				1	9	646.3411	RH WIPER DEFLECTOR			
		2		2	8	647.7703	STRUT ASSY			
		2		2	7	647.0112	STRUT BRACKET			
	1	1		1	6	646.3511	STRUT			
	1	1	1	1	5	646.3510	STRUT			
2		2		2	4	646.3810	BRACKET			
			1	1	3	646.2910	DEFLECTOR			
	1	1		1	2	646.3001	LOWER CUTTER ASSY			
			1	1	1	646.3301	UPPER CUTTER ASSY			
X						646.4006	LOWER CUTTER TIED PROVISIONS			
	X					646.4005	LOWER CUTTER REMOVABLE PROVISIONS			
		X				646.4004	FIXED PROVISIONS KIT			
			X			646.4003	CABLE CUTTERS KIT WITHOUT FIXED PROVISIONS			
				X		646.4002	AS350 WIPER DEFLECTOR KIT			
					X	646.4001	AS350 CABLE CUTTERS KIT			
4006	4005	4004	4003	4002	4001	FIND #	PART #	DESCRIPTION	MATL	SPEC.

QTY		NEXT ASSY (S)		ORIGINAL DATE REV. DATE DRAWN BY E. HUFF P. BRAVO		DART AEROSPACE APICAL INDUSTRIES, INC. DBA DART AEROSPACE		3030 ENTERPRISE CT., SUITE A VISTA, CA. 92081 (760)-724-5300	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS .000 2 PLACE DECIMALS .00 ANGLES .5°		REV. B		DWG. NO. 646.4000		SCALE NONE		SHEET 1 OF 5	



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO.

05304

SHEET 1 OF 1

DWG NO. 646.4000

REV: C

PREPARED BY J. BECKER

DATE: 02/04/16

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: AS350 CABLE CUTTERS KIT

APPROVED BY:

ENGR

MFG

QC

EFF. NEXT ORDER

REASON: REVISED F/N 12.

ECR:
N/A

ACTION ITEM:
1. N/A

SHEET 1, BOM IS:

12	R	601.1624	8	16	LOCKNUT	MS21042L3	
F/N	TC	PART NUMBER	4006	4005	DESCRIPTION	MATERIAL	SPECIFICATION
			QTY				
DOCUMENTS EFFECTED:					CHANGE CATEGORY	DER REVIEW REQUIRED	
☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☒ BOM					☐ MAJOR ☒ MINOR	☐ YES ☒ NO	

